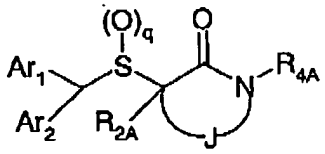
Appl. No.: 10/716,238
Art Unit: 1625

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of the Claims:

Claims 1-72 (cancelled).

73. (new) A compound of formula (V):



(V)

wherein:

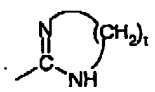
Ar_1 and Ar_2 are each independently selected from C_6-C_{10} aryl or heteroaryl;

wherein each of Ar_1 or Ar_2 may be independently optionally substituted with 1-3 substituents independently selected from:

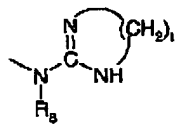
a) H, C_6-C_{10} aryl, heteroaryl, F, Cl, Br, I, -CN, -CF_3, -NO_2, -OH, -OR_7, -$O(CH_2)_pNR_9R_{10}$, -$OC(=O)R_7$, -$OC(=O)NR_9R_{10}$, -$O(CH_2)_pOR_8$, -CH_2OR_8, -NR_9R_{10}, -$NR_8S(=O)_2R_7$, -$NR_8C(=O)R_7$, or -$NR_8C(=S)R_7$;

b) -CH_2OR_{11};

c) -$NR_8C(=O)NR_9R_{10}$, -$NR_8C(=S)NR_9R_{10}$, -CO_2R_{12}, -$C(=O)R_{13}$, -$C(=O)NR_9R_{10}$, -$C(=S)NR_9R_{10}$, -$CH=NOR_{12}$, -$CH=NR_7$, -$(CH_2)_pNR_9R_{10}$, -$(CH_2)_pNHR_{11}$, -$CH=NNR_{12}R_{12A}$, -$C(=NR_8)NR_{8A}R_{8B}$ -$NR_8C(=NH)R_{8A}$, -



or



;

$NR_8C(=NH)NR_{8A}R_{8B}$,

d) -$S(O)_yR_7$, -$(CH_2)_pS(O)_yR_7$, -$CH_2S(O)_yR_7$; and

e) C_1-C_8 alkyl, C_2-C_8 alkenyl, or C_2-C_8 alkynyl, where:

1) each alkyl, alkenyl, or alkynyl group is unsubstituted; or

2) each alkyl, alkenyl or alkynyl group is independently substituted with 1 to 3 groups independently selected from C_6-C_{10} aryl, heteroaryl, F, Cl, Br, I, CF_3, -CN, $-NO_2$, -OH, $-OR_7$, $-CH_2OR_8$, $-NR_9R_{10}$, $-O-(CH_2)_p-OH$, $-S-(CH_2)_p-OH$, $-X_1(CH_2)_pOR_7$, $X_1(CH_2)_pNR_9R_{10}$, $-X_1(CH_2)_pC(=O)NR_9R_{10}$, $-X_1(CH_2)_pC(=S)NR_9R_{10}$, $-X_1(CH_2)_pOC(=O)NR_9R_{10}$, $-X_1(CH_2)_pCO_2R_8$, $-X_1(CH_2)_pS(O)_yR_7$, $-X_1(CH_2)_pNR_8C(=O)NR_9R_{10}$, $-C(=O)R_{13}$, $-CO_2R_{12}$, $-OC(=O)R_7$, $-C(=O)NR_9R_{10}$, $-OC(=O)NR_{12}R_{12A}$, O-tetrahydropyranyl, $-C(=S)NR_9R_{10}$, $-CH=NNR_{12}R_{12A}$, $-CH=NOR_{12}$, $-CH=NR_7$, $-CH=NNHCH(N=NH)NH_2$, $-NR_8CO_2R_7$, $-NR_8C(=O)NR_9R_{10}$, $-NR_8C(=S)NR_9R_{10}$, $-NHC(=NH)NH_2$, $-NR_8C(=O)R_7$, $-NR_8C(=S)R_7$, $-NR_8S(=O)_2R_7$, $-S(O)_yR_7$, $-S(=O)_2NR_{12}R_{12A}$, $-P(=O)(OR_8)_2$, $-OR_{11}$, and a C_5-C_7 monosaccharide where each hydroxyl group of the monosaccharide is independently either unsubstituted or is replaced by H, C_1-C_4 alkyl, C_1-C_4 alkoxy, or $-O-C(=O)R_7$;

X_1 is -O-, -S-, $-N(R_8)-$;

J is C_2-C_4 alkylene or Q-CO-;

Q is C_1-C_3 alkylene;

R_{2A} is H, C_1-C_6 alkyl, aryl or heteroaryl;

R_{4A} is H, C_1-C_6 alkyl, aryl or heteroaryl;

R_7 is C_1-C_6 alkyl, C_6-C_{10} aryl, or heteroaryl;

R_8, R_{8A} and R_{8B} are each independently H, C_1-C_4 alkyl, or C_6-C_{10} aryl;

R_9 and R_{10} are independently selected from H, C_1-C_4 alkyl, and C_6-C_{10} aryl; or R_9 and R_{10} together with the nitrogen to which they are attached, form a 3-7 member heterocyclic ring;

R_{11} is the residue of an amino acid after the hydroxyl group of the carboxyl group is removed;

R_{12} and R_{12A} are each independently selected from H, C_1-C_6 alkyl, cycloalkyl, C_6-C_{10} aryl, and heteroaryl; or R_{12} and R_{12A}, together with the nitrogen to which they are attached, form a 5-7 member heterocyclic ring;

R_{13} is H, C_1-C_6 alkyl, cycloalkyl, C_6-C_{10} aryl, heteroaryl, -C(=O)R_7, -C(=O)NR_9R_{10}, or -C(=S)NR_9R_{10};

p is from 1, 2, 3, or 4;

q is 0, 1, or 2;

t is 2, 3, or 4;

y is 0, 1 or 2;

or the stereoisomeric forms, mixtures of stereoisomeric forms, or pharmaceutically acceptable salt and ester forms thereof.

74. (new) The compound of claim 73 wherein Ar_1 and Ar_2 are phenyl and q=1.

75. (new) The compound of claim 73 wherein Ar_1 and Ar_2 are each independently phenyl or thienyl.

76. (new) The compound of claim 75 wherein Ar_1 and Ar_2 are phenyl.

77. (new) The compound of claim 73 wherein q is 1.

78. (new) The compound of claim 73 wherein J is C_2 alkylene.

79. (new) The compound of claim 73 wherein J is C_3 alkylene.

80. (new) The compound of claim 73 wherein R_{2A} is H or C_1-C_6 alkyl and R_{4A} is phenyl, thienyl or pyridyl.

81. (new) The compound of claim 80 wherein R_{4A} is phenyl.

82. (new) The compound of claim 73 wherein Ar_1 and Ar_2 are phenyl, q is 1, and J is C_2-C_3 alkylene.

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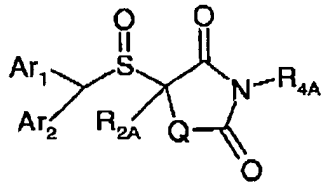
83. (new) The compound of claim 73 wherein q is 1 and J is Q-CO to form a compound of formula (VI):

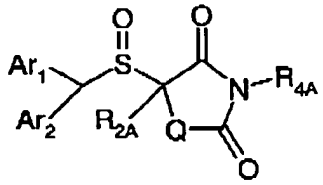


(VI)

84. (new) The compound of claim 83 wherein Q is C_1 alkylene.

85. (new) The compound of claim 83 wherein Q is C_2 alkylene.

86. (new) The compound of claim 83 wherein the compound is selected in accordance with the following table:

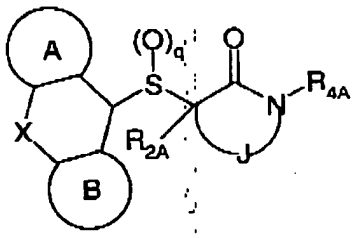


(VI)

No.	Ar_1	Ar_2	R_{2A}	Q	R_{4A}
VI-1	Phenyl	Phenyl	H	CH_2	H
VI-2	Phenyl	Phenyl	H	CH_2	CH_3
VI-3	Phenyl	Phenyl	H	CH_2	$(CH_2)_2OMe$
VI-4	Phenyl	Phenyl	H	CH_2	$(CH_2)_2OH$
VI-5	Phenyl	Phenyl	H	CH_2	(*S*)-$CH(CH_3)CH_2OH$
VI-6	4-Fluorophenyl	4-Fluorophenyl	H	CH_2	CH_3
VI-7	3-Thienyl	3-Thienyl	H	CH_2	H

No.	Ar_1	Ar_2	R_{2A}	Q	R_{4A}
VI-8	3-Thienyl	Phenyl	H	CH_2	H
VI-9	Phenyl	Phenyl	H	$(CH_2)_2$	H

87. (new) A compound of formula (VII):



(VII)

wherein

X is a bond, $-CH_2CH_2-$, -O-, $-S(O)_y-$, $-N(R_8)-$, $-CHN(R_8)-$, -CH=CH-, $-CH_2-CH=CH-$, C(=O), $-C(R_8)=N-$, $-N=C(R_8)-$, $-C(=O)-N(R_8)-$, or $-NR_8-C(=O)-$;

Rings A and B, together with the carbon atoms to which they are attached, are each independently selected from:

a) a 6-membered aromatic carbocyclic ring in which from 1 to 3 carbon atoms may be replaced by hetero atoms selected from oxygen, nitrogen and sulfur; and

b) a 5-membered aromatic carbocyclic ring in which either:

i) one carbon atom is replaced with an oxygen, nitrogen, or sulfur atom;

ii) two carbon atoms are replaced with a sulfur and a nitrogen atom, an oxygen and a nitrogen atom, or two nitrogen atoms; or

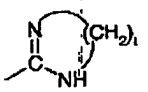
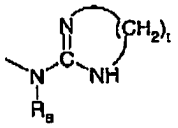
iii) three carbon atoms are replaced with three nitrogen atoms, one oxygen and two nitrogen atoms, or one sulfur and two nitrogen atoms;

wherein Ring A and Ring B may each independently be substituted with 1-3 substituents selected from:

a) H, C_6-C_{10} aryl, heteroaryl, F, Cl, Br, I, -CN, -CF_3, -NO_2, -OH, -OR_7, -$O(CH_2)_pNR_9R_{10}$, -$OC(=O)R_7$, -$OC(=O)NR_9R_{10}$, -$O(CH_2)_pOR_8$, -CH_2OR_8, -NR_9R_{10}, -$NR_8S(=O)_2R_7$, -$NR_8C(=O)R_7$, or –$NR_8C(=S)R_7$;

b) -CH_2OR_{11};

c) –$NR_8C(=O)NR_9R_{10}$, -$NR_8C(=S)NR_9R_{10}$, -CO_2R_{12}, -$C(=O)R_{13}$, -$C(=O)NR_9R_{10}$, -$C(=S)NR_9R_{10}$, -$CH=NOR_{12}$, -$CH=NR_7$, -$(CH_2)_pNR_9R_{10}$, -$(CH_2)_pNHR_{11}$, -$CH=NNR_{12}R_{12A}$, -$C(=NR_8)NR_{8A}R_{8B}$ –$NR_8C(=NH)R_{8A}$, -


or


$NR_8C(=NH)NR_{8A}R_{8B}$,

d) -$S(O)_yR_7$, -$(CH_2)_pS(O)_yR_7$, -$CH_2S(O)_yR_7$; and

e) C_1-C_8 alkyl, C_2-C_8 alkenyl, or C_2-C_8 alkynyl, where:

1) each alkyl, alkenyl, or alkynyl group is unsubstituted; or

2) each alkyl, alkenyl or alkynyl group is independently substituted with 1 to 3 groups independently selected from C_6-C_{10} aryl, heteroaryl, F, Cl, Br, I, CF_3, -CN, -NO_2, -OH, -OR_7, -CH_2OR_8, -NR_9R_{10}, -O-$(CH_2)_p$-OH, -S-$(CH_2)_p$-OH, -$X_1(CH_2)_pOR_7$, $X_1(CH_2)_pNR_9R_{10}$, -$X_1(CH_2)_pC(=O)NR_9R_{10}$, -$X_1(CH_2)_pC(=S)NR_9R_{10}$, -$X_1(CH_2)_pOC(=O)NR_9R_{10}$, -$X_1(CH_2)_pCO_2R_8$, -$X_1(CH_2)_pS(O)_yR_7$, -$X_1(CH_2)_pNR_8C(=O)NR_9R_{10}$, -$C(=O)R_{13}$, -$CO_2R_{12}$, -$OC(=O)R_7$, -$C(=O)NR_9R_{10}$, -$OC(=O)NR_{12}R_{12A}$, O-tetrahydropyranyl, -$C(=S)NR_9R_{10}$, -$CH=NNR_{12}R_{12A}$, -$CH=NOR_{12}$, -$CH=NR_7$, -$CH=NNHCH(N=NH)NH_2$, -$NR_8CO_2R_7$, -$NR_8C(=O)NR_9R_{10}$, -$NR_8C(=S)NR_9R_{10}$, -$NHC(=NH)NH_2$, -$NR_8C(=O)R_7$, -$NR_8C(=S)R_7$, -$NR_8S(=O)_2R_7$, -$S(O)_yR_7$, -$S(=O)_2NR_{12}R_{12A}$, -$P(=O)(OR_8)_2$, -$OR_{11}$, and a C_5-C_7 monosaccharide where each hydroxyl group of the monosaccharide is independently either unsubstituted or is replaced by H, C_1-C_4 alkyl, C_1-C_4 alkoxy, or -O-$C(=O)R_7$;

J is C_2-C_4 alkylene or Q-CO-;

Q is C_1-C_3 alkylene;

R_{2A} is H, C_1-C_6 alkyl, aryl or heteroaryl;

R_{4A} is H, C_1-C_6 alkyl, aryl or heteroaryl;

R_7 is C_1-C_6 alkyl, C_6-C_{10} aryl, or heteroaryl;

R_8, R_{8A} and R_{8B} are each independently H, C_1-C_4 alkyl, or C_6-C_{10} aryl;

R_9 and R_{10} are independently selected from H, C_1-C_4 alkyl, and C_6-C_{10} aryl; or R_9 and R_{10} together with the nitrogen to which they are attached, form a 3-7 member heterocyclic ring;

R_{11} is the residue of an amino acid after the hydroxyl group of the carboxyl group is removed;

R_{12} and R_{12A} are each independently selected from H, C_1-C_6 alkyl, cycloalkyl, C_6-C_{10} aryl, and heteroaryl; or R_{12} and R_{12A}, together with the nitrogen to which they are attached, form a 5-7 member heterocyclic ring;

R_{13} is H, C_1-C_6 alkyl, cycloalkyl, C_6-C_{10} aryl, heteroaryl, -C(=O)R_7, -C(=O)NR_9R_{10}, or -C(=S)NR_9R_{10};

X_1 is -O-, -S-, -N(R_8)-;

p is from 1 to 4;

q is 0, 1, or 2;

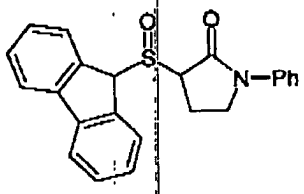
t is 2, 3, or 4;

y is 0, 1 or 2;

or the stereoisomeric forms, mixtures of stereoisomeric forms, or pharmaceutically acceptable salt and ester forms thereof.

88. (new) The compound of claim 87, wherein rings A and B are phenylene; X is a bond or -O- and q=1.

89. (new) The compound of claim 88 having the formula (VII-1):



(VII-1)

90. (new) The compound of claim 87 wherein rings A and B are each independently selected from phenylene and thienylene.

91. (new) The compound of claim 90 wherein rings A and B are phenylene.

92. (new) The compound of claim 87 wherein q is 1.

93. (new) The compound of claim 87 wherein X is a bond, -O-, or CH_2CH_2.

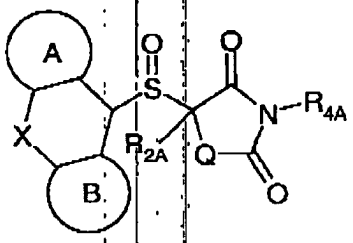
94. (new) The compound of claim 93 wherein X is a bond.

95. (new) The compound of claim 87 wherein J is C_2 alkylene.

96. (new) The compound of claim 87 wherein J is C_3 alkylene.

97. (new) The compound of claim 87 wherein rings A and B are phenylene, X is a bond, -O-, or CH_2CH_2, q is 1, and J is C_2-C_3 alkylene.

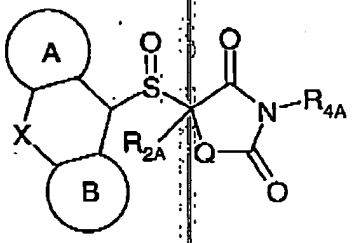
98. (new) The compound of claim 87 wherein q is 1; and J is Q-CO- to form a compound of formula (VIII):



(VIII)

99. (new) The compound of claim 98 wherein rings A and B are phenylene; and X is a bond or -O-.

100. (new) The compound of claim 98 wherein the compounds are selected in accordance with the following table:



(VIII)

No.	A	B	X	R_{2A}	Q	R_{4A}
VIII-1	Phenylene	Phenylene	bond	H	CH_2	H
VIII-2	Phenylene	Phenylene	bond	H	CH_2	Me
VIII-3	Phenylene	Phenylene	bond	H	CH_2	$(CH_2)_2OMe$
VIII-4	Phenylene	Phenylene	bond	H	CH_2	$(CH_2)_2OH$
VIII-5	Phenylene	Phenylene	bond	H	CH_2	$CH(CH_3)CH_2OH$
VIII-6	Phenylene	Phenylene	bond	H	CH_2	OH
VIII-7	Phenylene	Phenylene	bond	H	CH_2	CH_2-(4-methoxyphenyl)
VIII-8	Phenylene	Phenylene	bond	H	CH_2	Ph
VIII-9	Phenylene	Phenylene	bond	H	$(CH_3)_2$	H

101. (new) A method of treating diseases or disorders in a subject in need thereof comprising administering a therapeutically effective amount of a compound of claim 73 or 87 to the subject for the treatment of sleepiness, tiredness, Parkinson's disease, cerebral ischemia, stroke, sleep apneas, eating disorders, attention deficit hyperactivity disorder, cognitive dysfunction or fatigue; or for the promotion of wakefulness, stimulation of appetite, or stimulation of weight gain.

102. (new) The method of claim 101 wherein the compound is administered for the treatment of sleepiness.

103. (new) The method of claim 101 wherein the compound is administered for the treatment of attention deficit hyperactivity disorder.

104. (new) The method of claim 101 wherein the compound is administered for the promotion of wakefulness.

105. (new) A method of treating diseases or disorders in a subject in need thereof comprising administering a therapeutically effective amount of a compound of claim 73 or 87 to the subject for the treatment of disorders associated with hypofunctionality of the cerebral cortex.

106. (new) The method of claim 105 wherein the compound is administered for the treatment of depression, schizophrenia, or chronic fatigue syndrome.

107. (new) A pharmaceutical composition comprising a compound of claim 73 or 87 in admixture with one or more pharmaceutically acceptable excipients.